



CITY OF HAYWARD

STAFF REPORT

AGENDA DATE 09/24/03

AGENDA ITEM 2

TO: Route 238 Working Group

FROM: Director of Public Works

SUBJECT: Initial Transportation Analysis Results (Portion of Working Paper No.2)

Transportation analysis is an essential part of the work that will be used for determining the viability of the proposed Route 238 Corridor Improvements Project and the most effective geometric layout of the revised facilities. The information presented today is preliminary and still a work in progress. It will primarily cover data on existing conditions and preliminary right of way requirements. Staff will provide an update on the traffic modeling status. In addition, the following items will be reviewed with the Working Group:

- Presentation of existing levels of service and travel time results
- Presentation of preliminary right-of-way analysis and potential changes in street access
- Analysis of existing parking along the corridor
- Viewing of VISSIM traffic operational model for existing conditions

Working Paper No. 2, Transportation & Right-of-Way Analysis, will be provided to the members prior to the next Working Group meeting. Due to the large volume of information that will be covered by this working paper, an additional review meeting will likely be necessary.

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Attachments: Existing Level of Service at Study Intersections
Aerial Photos with Right of Way and Street Access Changes
On-Street Parking and Parking Enforcement

Existing Level of Service at Study Intersections

Intersection	AM		PM	
	LOS	Delay	LOS	Delay
Foothill Blvd.- Mattox-Castro Valley Blvd.	F	66.7	F	78.1
Foothill Blvd.- Grove Way	D	25.2	D	37.5
Foothill Blvd.- City Center Dr (N)(Hazel)	C	17.2	F	70.8
Foothill Blvd.- City Center Dr. (S)	C	20.2	D	38.0
Foothill Blvd.- Russell Way	A	3.6	B	5.2
Foothill Blvd.- A Street	D	26.1	E	51.7
Foothill Blvd.- B Street	C	16.8	B	14.3
Foothill Blvd.- C Street	A	3.6	B	8.9
Foothill Blvd.- D Street	D	29.3	D	31.1
Foothill Blvd.- Mission Blvd.- Jackson St.	F	127.8	F	323.8
Jackson St. - Watkins St.	E	50.6	E	46.8
Mission Blvd.- Fletcher Lane	C	17.2	C	22.7
Mission Blvd.- Highland Ave.	B	9.1	B	12.3
Mission Blvd.- Carlos Bee Blvd..	F	91.0	F	69.0
Mission Blvd.- Harder Rd.	D	37.3	E	44.3
Mission Blvd.- Sorenson Rd.	B	8.0	C	18.8
Mission Blvd.- Calhoun St./Jefferson St.	E	50.9	C	24.8
Mission Blvd.- Hancock Street	B	5.4	B	8.0
Mission Blvd.- Tennyson Road	C	23.6	C	24.9
Mission Blvd. - La Vista Quarry	A	2.8	A	4.1
Mission Blvd.- Industrial Parkway	D	27.4	D	30.6

of Intersections operating as LOS F

3

4

Key (using 1994 Highway Capacity Manual Methodology)

A - less than 5 seconds of delay

B - between 5 and 15 seconds of delay

C - between 15 and 25 seconds of delay

D - between 25 and 40 seconds of delay

E - between 40 and 60 seconds of delay

F - greater than 60 seconds of delay

Note: Caltrans existing signal timings were used

Existing Travel Times from Mattox to Industrial Pkwy

(In Minutes)

	AM		PM	
	<u>NB</u>	<u>SB</u>	<u>NB</u>	<u>SB</u>
Test Driver	16	18	23	15
VISSIM	17	21	23	17

Potential Street Access Changes
Route 238 Corridor Improvement Project

Streets to be closed (cul-de-sac):

- Apple @ Foothill (East side)
- Russell @ Foothill
- First @ C
- E. Main @ Foothill
- Armstrong @ E. Main
- E @ Foothill
- Devon @ Mission
- Kellogg @ Mission
- Douglas @ Mission
- Monticello @ Mission
- Quarry Service Rd (planned elimination with closure of Quarry and extension of Tennyson)

Streets with left turn from Foothill/Mission:

- Grove
- City Center (both)
- A Street
- B Street (NB only)
- C Street
- D Street
- Fletcher
- Highland/Sycamore (realign)
- Carlos Bee
- Berry (NB only)
- Torrano (SB only)
- Harder
- Sorenson
- Calhoun/Jefferson (realign)
- Hancock
- Tennyson
- Valle Vista (NB only)
- Industrial Pkwy

Streets w/o median break:

- Cotter (has NB left now)
- Kimball (has NB left now)
- Pinedale Ct. (has opening now)
- Palisade (has opening now)
- Central (has opening now)
- Berry (SB)
- Torrano (NB)
- Broadway
- Webster
- Greeley
- Overhill

On-Street Parking and Parking Enforcement

Since a major component of the proposed widening project is to introduce parking prohibitions during peak periods, one of the tasks of this study was to estimate the number of vehicles that would be affected by the prohibitions.

A parking occupancy survey was conducted on Wednesday May 21, 2003 and again on Wednesday May 28, 2003 along the Route 238 corridor from Mattox Road to Industrial Parkway. The surveys were performed during the AM peak period between 7:00 and 9:00 AM and then again during the PM peak hours from 4:00 to 6:00 PM. These two time frames were chosen in order to determine the number of vehicles that would be displaced should the parking lane be removed or restricted during the peak hours.

The surveys were conducted by noting the license plate numbers of parked vehicles in each parking space along the entire corridor every 20 minutes during the observation period.

The SR 238 corridor was broken down into 22 segments in the northbound direction and 21 segments in the southbound direction in order to understand the parking occupancy on a block-by-block basis. Each segment consisted of a section between two study intersections (i.e., those that were studied under the Traffic Operations Analysis portion of this study), all of which are signalized with the exception of Central, Berry, and Torrano.

Over the entire length of the study area, 184 cars were parked during the AM peak hours and 420 vehicles were parked during the PM peak hours. The average dwell time for the AM peak period was 56 minutes while the PM peak hour dwell time averaged 1 hour and 1 minute. While the difference in average dwell time is less than appreciable, the difference in volume is significant with the PM parking occupancy at 2.3 times that of the morning occupancy. The volume difference is expected, given that more businesses are open during the PM peak period than the AM peak period.

While the magnitude varied, the higher PM parking occupancy was consistent when the data for the entire route was broken down into three separate segments: Industrial Parkway to Harder Road; Harder Road to Jackson Street; and Jackson Street to Mattox Road.

- Between Industrial Parkway and Harder Road, there were a total of 50 parked cars observed in the AM period and 100 cars in the PM period. The average dwell time for this section was 1 hour and 5 minutes in the AM peak and 56 minutes in the PM peak.
- Within the central portion of the study area, between Harder Road and Jackson Street, a total of 74 parked vehicles were observed in the morning peak and 154 in the evening peak. The average dwell time for this section during the AM peak is 54 minutes and 1 hour and 12 minutes during the PM peak.
- The northern section of the study area, between Jackson Street and Mattox Road, represented the highest volume of parked vehicles in the PM peak hour. Within the northern section, a total of 60 vehicles cars were counted during the AM peak period and 166 were counted during the PM peak period. The average dwell time for this period was 49 minutes during the morning peak and 56 minutes during the evening peak.

While the number of vehicles roughly doubled in the PM time frame along the corridor, the area did not experience any significant shift in parking from one area to another from the AM to the PM peak periods.

A detailed tabulation of parking occupancy for the individual sections is provided in Table 3.

Table 3 Detailed Parking Occupancy Survey Results					
#	Location	<u>AM Peak Period (7-9AM)</u>		<u>PM Peak Period (4-6PM)</u>	
		Total Veh.	Avg. Dwell Time	Total Veh.	Avg. Dwell Time
Southern Section: Industrial to Harder					
1	Industrial to Valle Vista	3	0:40	14	0:36
2	Valle Vista to Tennyson	5	1:07	5	0:45
3	Tennyson to Hancock	17	1:44	29	1:13
4	Hancock to Calhoun/ Jefferson	11	0:54	32	0:54
5	Calhoun/Jefferson to Sorenson	13	0:43	14	0:19
6	Sorenson to Harder	1	0:15	6	0:20
Subtotal Southern Section:		50	1:05	100	0:56
Central Section: Harder to Jackson					
7	Harder to Torrano	33	0:57	52	1:24
8	Torrano to Berry	15	0:44	43	1:01
9	Berry to Central	2	1:00	9	1:18
10	Central to Carlos Bee/ Orchard	4	0:26	11	1:16
11	Carlos Bee/Orchard to Highland/ Sycamore	18	0:43	30	1:23
12	Highland/Sycamore to Fletcher	2	0:15	9	0:15
13	Fletcher to Mission/ Jackson/ Foothill	0	0:00	0	0:00
Subtotal Central Section:		74	0:54	154	1:12

Table 3 (continued)**Detailed Parking Occupancy Survey Results**

		<u>AM Peak Period (7-9AM)</u>		<u>PM Peak Period (4-6PM)</u>	
#	Location	Total Veh.	Avg. Dwell Time	Total Veh.	Avg. Dwell Time
Northern Section: Jackson to Mattox					
14	Mission/Jackson/Foothill to D	0	0:00	0	0:00
15	D to C	1	0:30	9	0:45
16	C to B	2	0:22	12	0:32
17	B to A	24	0:51	51	0:51
18	A to City Center	5	0:39	37	0:55
19	City Center to City Center/Hazel	7	0:27	14	0:46
20	City Center/Hazel to Grove	21	1:13	43	1:02
Subtotal Northern Section:		60	0:49	166	0:56
Total all Sections:		184	0:56	420	1:01

Enforcement of the parking prohibitions is an important consideration if operational benefits are to be maximized. The City of San Francisco has many such areas throughout the City, so their Department of Parking and Transportation (DPT) was contacted to learn how their enforcement program works.

San Francisco enforces its peak period parking restrictions through the use of roving tow trucks operated by City Tow, an independent contractor. Each tow truck includes one driver and one ‘Checker’ (a DPT employee), and each segment of the city with peak parking restrictions is assigned from 1 to 3 trucks depending on the area size. Each day, the tow trucks constantly rove throughout their assigned area during the peak hours, which are between 7 and 9 AM and either 3-6 PM or 4-7 PM depending on the area. City Tow is paid directly by the vehicle owners for the release of their towed vehicles. Vehicle owners must also pay the citation amount either at DPT or at City Tow. However, towing charges can only be paid at City Tow.

Later during this study effort, the microsimulation model will be used to estimate the disruption to traffic flow if illegally parked vehicles are not removed immediately by tow trucks.

